Maths - Year 10H - Term 3 - Graphs, Area and Volume

Year group 10	Subject: Year 10H Term 3 - Linear Graphs, Area and Volume
Prior learning- linked to National curriculum	Graphs Students would have seen straight line graphs throuhgout KS3 but this unit looks to consolidate that learning and ensure that students are ready to answer GCSE style questions, as well as some non-linear graphs. This builds on the Algebra units at the start of the year and allows students to apply them to linear graphs. Area and Volume This topic builds on the Perimeter and Area units seen throughout KS3 as well as the Volume unit seen in year 9 Term 2.
Rationale	Graphs This topic requires a good algebraic fluency, and explores different graphical representations of equations. This unit has been placed at this point to ensure that teachers are comfortable with their classes and that all key prerequisites have been covered. This then builds onto later units looking further at higher order graphs as well as solving inequalities in 2d space. Area and Volume Geometry is currently a focus for PCS Maths scheme of work, meaning that the planning is a key focus and specific time is given to this. Area and volume represent a significant section of geometric understanding, This term is relative uninterrupted allow all relevant topics to be covered as well as time for developing fluency and depth
Vocabulary:	**Keywords** Graphs**:** Linear, axes, parallel, gradient, intercept, perpendicular, quadratic, non-linear, curve, Maximum, minimum Area and volume: Area, Volume, Surface area, Prism, cross-section, cone, pyramid, Solid, Circumference, radius, diameter, arc, chord, sector
Cultural Capital:	Part of the linear graph topic looks at speed and velocity and other real life graphs such as conversion rates between units. The foundational aspects of the Area and Volume unit can be used to address problems involving decorating, resurfacing and architectural construction of shapes.

Key assessments- name the assessments	<u>Graphs</u> Finding gradient and y- intercept of a linear graph Use of y=mx+c sketching nonlinear graphs <u>Area and Volume</u> Area and perimeter of 2d shapes Volume and Surface area of prisms Circles circumference and area Volume of solids. Unit wrapper covering the above topics
What do children know/ can do now (EDSM)	**Emerging students** will be able to identify the difference between linear and non linear graphs and may be able to find gradients or y intercepts. They will also be able to calculate simple areas and volumes **Mastered students** Will have a depth of knowledge of straight line graphs and will be able to solve complex problems involving linear and non linear graphs. They will also be able to calculate area and volumes across many different shapes, as well as unseen compound areas or those involving algebraic simplification